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XPRESSATHON

Instructions

1. There are two problems provided for Challenge 1. You can choose ANY ONE problem and provide a solution.

2. You can use any of the 3 programming languages mentioned below to solve the problem.
   1 - Java
   2 - Python
   3 - Nodejs

3. You can use any open source libraries/apis/frameworks supported by the above mentioned 3 programming languages.

4. Create a project in github (https://github.com (https://github.com)) ONLY and provide clear instructions to setup and run the application in the readme file.

5. You need to generate a JSON output file as part of your solution as per the JSON schema provided in the problem section.

6. Once the solution is ready please submit your solution on or before 27th December 2021 using link - Submit Solution (https://www.xpressbees.com/xpressathon/submit-challenge-1) You need to submit your solution by sharing the github url and output JSON file. Please make sure that the output JSON file conforms to the JSON Schema provided, before uploading.

7. You can have multiple submissions of your solution till the cut off date. The latest submission will be considered.

8. Results will be shared on Dec-29th 2021 and teams shortlisted will be eligible for final challenge participation.

Questions

Problem 1: Address Normalization

Normalize unstructured raw Indian addresses by segregating personal information and address to a defined json structure. Addresses can contain spelling mistakes which need to be corrected and addresses need to be geocoded.

Input:

Raw Indian addresses will be available in datasheet address.txt.

Please note that addresses are fake addresses but can be mapped to actual geocodes.

Eg:

Address1: Flat no. 45, Millennium Heights apt, 2nd cross, krmangala 8th blk, bangalore 560034

Address2: #57, Prestige Elite, 4th phase, 2nd cross, JPNAGAR , bangalore 560003

Address3: Shoba apt, 7th cross malleswram, flat no 34, blore -560 094

Expected Output json:

```
{
    "addresses": [
        {
            "addressline1": "Flat no. 45, Millennium Heights apartment",
            "addressline2": "2nd main, 2nd cross, Koramangala 8th block ",
            "locality": "Koramangala",
            "city": "Bangalore",
            "state": "Karnataka",
            "pincode": "560034",
            "geocodes": "12.934533,77.626579"
        },
        {
            "addressline1": "#57, Prestige Elite",
            "addressline2": "4th phase, 2nd cross, JP Nagar",
            "locality": "JP Nagar",
            "city": "Bangalore",
            "state": "Karnataka",
            "pincode": "560078",
            "geocodes": "12.964533,77.676579"
        },
        {
            "addressline1": "Shoba apt,flat no 34",
            "addressline2": "7th cross Malleswaram",
            "locality": "Malleswaram",
            "city": "Bangalore",
            "state": "Karnataka",
            "pincode": "560003",
            "geocodes": "12.914233,77.606079"
        }
    ]
}
```

The normalized addresses should be submitted as a json array as per the json schema provided.

Download Files
(https://www.xpressbees.com/xpressathon/download_file/Problem_1_Address_Normalization.zip)

Submit Solution Here

Problem 2: Load Conatainer

Find the best possible way to load maximum carton boxes in a shipping container and also provide arrangement instructions to the loading staff.

Assumptions:

Shipping container Size: 20ft

Space available - 19.4 X 7.8 X 8.6 (LXWXH in feet)

Carton Box sizes: (in inches)

Carton Small: 12 x 18 x 24 - 300 nos

Carton Big : 24 x 18 x 36 - 250 nos

Expected Solution

Maximum number of carton boxes of 2 different sizes (size mentioned above) which can be loaded to the shipping container.

Instructions to arrange the carton boxes in shipping container

Expected solution to be submitted in json format as per the provided json schema.

Output json:

```
{
   "carton_small": 200,
   "carton_big": 50,
   "instructions": [
      "Place carton_small upside down on edge wall",
      "Place carton_big in even rows"
   ]
}
```

Download Files

(https://www.xpressbees.com/xpressathon/download_file/Problem_2_Load_Container.zip)

Submit Solution Here